



CNS histopathology on 203 bovines with clinical suspicion of BSE in Denmark 2001 to 2016

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CNS histopathology on 203 bovines with clinical suspicion of

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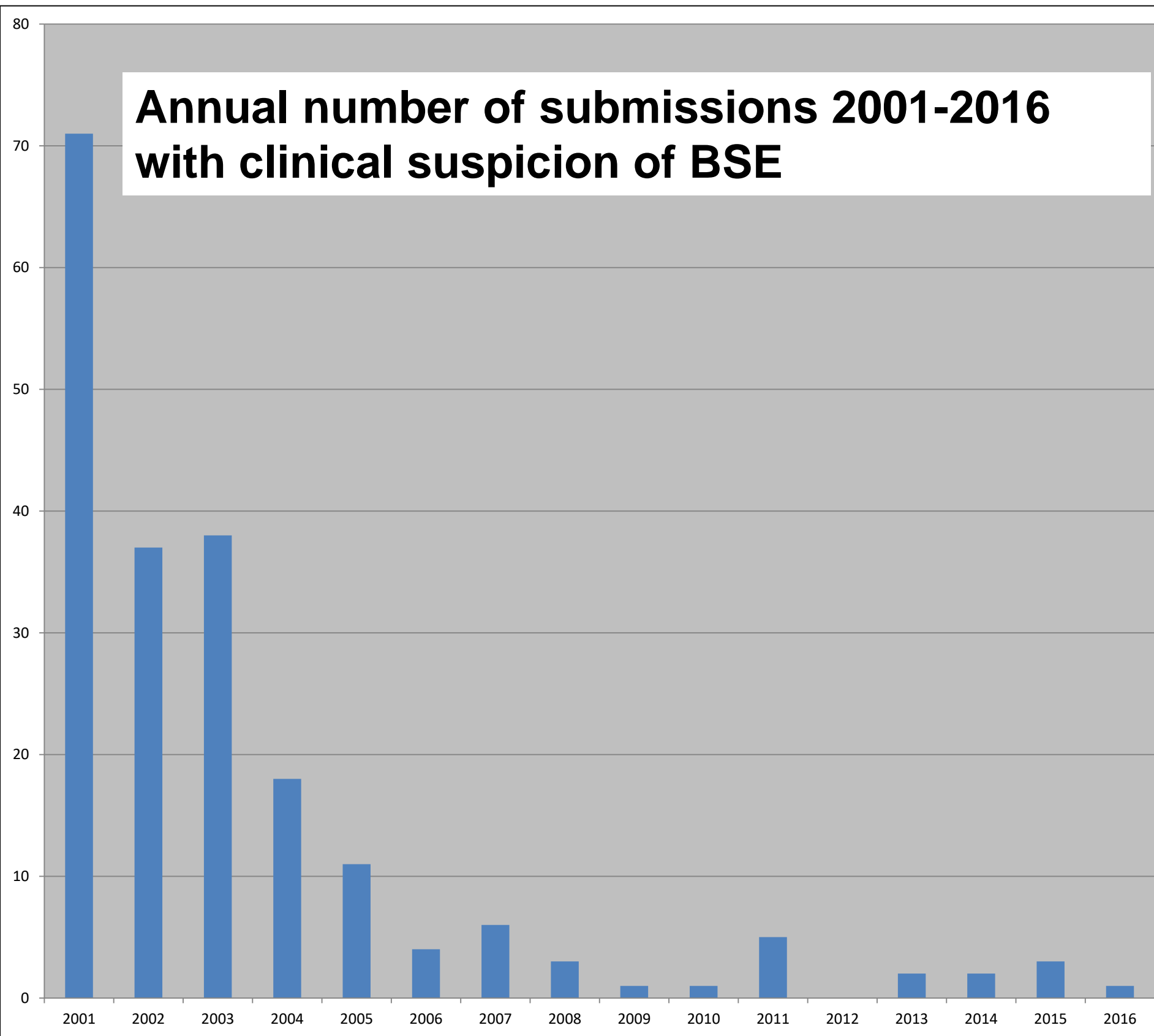
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The first case of Bovine Spongiform Encephalopathy (BSE) in Denmark was reported in 1992 in an UK imported Highland Cattle. Since 2000 a total of 18 indigenous BSE cases have been found in cattle. The last case was found in 2009 in a normally slaughtered 14 years old dairy cow.

The aim of this study was to summarize the pathological findings in 203 bovines with clinical suspicion of BSE in Denmark 2001 to 2016, the period with the author as main investigator.

The annual number of suspicions peaked in 2001 with 71 cases, followed by a gradual decrease until 2005. From 2006 and on-wards a mean number of 3 cases have been submitted. In the same period the total bovine population has decreased from 1.8 mil to 1.4 mil.

Two cases of BSE were diagnosed as listed in Table 1. The most prevalent differential diagnosis was listeriosis (n=109), characterized by multifocal, necrotizing, non-suppurative encephalitis confined to the brain stem region. Ten cases showed encephalitis characterized by low grade multifocal, non-suppurative cuffings, mainly in cerebrum and brain stem. Non specific etiology was suspected. In another twenty cases a specific diagnose was made, Table 1 and figures. Forty eight (24%) of the cases revealed no significant lesions, whereas eight cases were unsuitable due to autolysis.



During 2001 to 2016 a total of 203 bovines were submitted to the instutute with clinical suspicion of having BSE. In two cases BSE was confirmed. The most common differential diagnosis was listeriosis, found in 54% of the cases. Listeriosis was characterized by multifocal, necrotizing, non-suppurative encephalitis confined to the brainstem region.



| Table 1. Differential diagnoses of bovines with clinical suspicion of BSE in Denmark 2001 to 2016 | | | | | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Diagnosis \ Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Total |
| Listeriosis | 31 | 20 | 29 | 10 | 5 | 3 | 4 | 1 | | | 3 | | 1 | | 2 | | 109 |
| Lesions not found | 25 | 9 | 7 | 2 | 2 | | 1 | 1 | | | | | | 1 | | 1 | 49 |
| Encephalitis | 6 | 2 | 1 | 1 | | | | | | | | | | | | | 10 |
| Unsuitable/autolysis | 2 | 1 | | 2 | 1 | | | | | 1 | | | | 1 | | | 8 |
| Hydrocephalus | 1 | | | | 1 | 1 | 1 | 1 | | | | | | | | | 5 |
| Intracerebral oedema | 1 | | | 1 | 2 | | | | | | | | | | | | 4 |
| Pituitary abscess | 1 | 1 | | 1 | | | | | | | | | 1 | | | | 3 |
| Cerebral abscess | | | | | | | | | | | | | | | 1 | | 1 |
| Ependymoma | | 1 | | | | | | | | | 1 | | | | | | 2 |
| Subdural haemorrhage | 2 | | | | | | | | | | | | | | | | 2 |
| Hepatic spongiform encephalopathy | | 1 | | 1 | | | | | | | | | | | | | 2 |
| BSE | 1 | | 1 | | | | | | | | | | | | | | 2 |
| Cerebellar necrosis and degeneration | | | | | | | | | | | 1 | | | | | | 1 |
| Meningial lymphosarcoma | | 1 | | | | | | | | | | | | | | | 1 |
| Malignant adenoma, pineal gland | | | | | | | | | 1 | | | | | | | | 1 |
| Cerebral malacia | | 1 | | | | | | | | | | | | | | | 1 |
| Neural storage disease | 1 | | | | | | | | | | | | | | | | 1 |
| Number of submissions per year | 71 | 37 | 38 | 18 | 11 | 4 | 6 | 3 | 1 | 1 | 5 | 0 | 2 | 2 | 3 | 1 | 203 |

